

Fly ash delivered to the Department and the Project shall be accompanied by a Certificate of Compliance based on a testing program which ensures a satisfactory and uniform product relative to these Specification requirements. The Certificate of Compliance covering material shipped in each car or tank truck shall be furnished in triplicate at the time of shipment. The original is to be furnished to the Materials and Research Engineer, Department of Transportation, 300 Airport Road, Bismarck, North Dakota 58504, with one copy going to the consignee and one copy to the Project Engineer.

The certificate shall contain the following information:

- A. Project number and name of Contractor.
- B. Fly ash source by name of company and location of plant.
- C. Quantity contained in tank truck or railroad car.
- D. Gross, tare, and net weight if shipped by truck.
- E. Car initials and number or tank truck number.
- F. Date of shipment.
- G. Statement that the material meets all Specification requirements.
- H. Signature of the person having legal authority to bind the supplier.

SECTION 822

PENETRATING WATER REPELLENT

822.01 GENERAL.

The penetrating water repellent treatment solution shall consist of an Organo Silicon compound dissolved in a suitable solvent carrier that, when applied, produces a hydrophobic surface covalently bonded to the concrete.

The Organo Silicon compound shall be one of the following:

ALKYL-ALKOXYSILANE

OLIGOMEROUS ALKYL-ALKOXYSILOXANE

The solvent will leave less than 1% residue upon evaporation.

The solution shall contain a minimum of 40% solids. The material shall be certified to meet or exceed the performance criteria listed below based on a single application of the solution according to the manufacturer's recommended rate of coverage.

The penetration water repellent treatment solution shall not stain, discolor, or darken concrete. Application of the solution shall not alter the surface texture or form a coating on concrete surfaces and shall be compatible with the use of special surface finish texture coatings as specified. Treated concrete shall be surface dry within 30 minutes after application.

822.02 TESTING.

The treated concrete shall meet the following requirements:

A. Absorption.

Test	Duration	Max. Absorption	Method
Water Immersion	48 hrs.	1% by weight	ASTM C-642
	50 days	2% by weight	ASTM C-642

B. Chloride Ion Penetration.

Test	Duration	Max. Absorption Cl-	Method
Salt Water Ponding*	90 days	0.75 lb. per cu. yd.	AASHTO T-259
		Depth: 1/2 inch to 1 inch	AASHTO T-260

*Based on non-abraded specimens.

SECTION 824 DAMPPROOFING AND WATERPROOFING

824.01 PRIMER.

Primer for use with asphalt in dampproofing and waterproofing shall meet ASTM D 41.

824.02 ASPHALT FOR DAMPPROOFING AND WATERPROOFING.

Asphalt for dampproofing and waterproofing shall meet ASTM D 449.

824.03 WOVEN COTTON FABRIC.

Woven cotton fabric saturated with bituminous substances for use in waterproofing shall meet ASTM D 173.

824.04 BLACK POLYETHYLENE MEMBRANE.

Black Polyethylene Membrane shall be a black polyethylene sheeting 0.010 inch thick plus rubberized asphalt 0.060 inch thick for a total nominal thickness of 0.070 inch.